

## Overall Lab Surveillance

### Total Specimens Collected

- Collected in Week 47: 10
- Season Total: 285

### Newly identified influenza

Newly identified; Cumulative

- Influenza A: 0 ; 6
- Influenza B: 0 ; 1

### Newly subtyped influenza

Newly identified; Cumulative

- Influenza A/H3N2: 0 ; 4
- Influenza B/HongKong: 0 ; 0
- Influenza B/Shanghai: 0 ; 0

## Sentinel Site Lab Surveillance

### Total Specimens Collected

- Collected in Week 47: 8
- Season Total: 200

### Newly identified influenza

Newly identified; Cumulative

- Influenza A: 0 ; 6
- Influenza B: 0 ; 0

### Newly subtyped influenza

Newly identified; Cumulative

- Influenza A/H3N2: 0 ; 4
- Influenza B/HongKong: 0 ; 0
- Influenza B/Shanghai: 0 ; 0

## Research Lab Surveillance

### Total Specimens Collected

- Collected in Week 47: 0
- Season Total: 25

### Newly identified influenza

Newly identified; Cumulative

- Influenza A: 0 ; 0
- Influenza B: 0 ; 1

### Newly subtyped influenza

Newly identified; Cumulative

- Influenza A/H3N2: 0 ; 0
- Influenza B/HongKong: 0 ; 0
- Influenza B/Shanghai: 0 ; 0

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# DoD Global Influenza Surveillance Program: *Influenza Surveillance at AFIOH*

## Week 47

20-26 November 2005

*Background information and surveillance methods of the DoD Global Influenza Surveillance Program may be found on page 11 of this report.*

**Total Influenza (Season) = Influenza A: 6    Influenza B: 1**

### Influenza Subtype:

Influenza A/H3N2: 4

### Influenza Surveillance Location

Isolate by Location



Subtype by Location



## AFIOH Reporting Procedures

The information in this report describes:

- 1) **Overall Laboratory Surveillance** (i.e., all respiratory specimens submitted to and processed by the AFIOH laboratory);
- 2) **Sentinel Site Laboratory Surveillance** (i.e., respiratory specimens submitted by the 39 sentinel sites using the protocol of selecting 6-10 influenza-like illness [ILI] specimens per week); and
- 3) **Overseas Research Laboratory Surveillance** (i.e., respiratory specimens submitted by two of the DoD overseas medical research laboratories [AFRIMS and NMRC-D] and the CHPPM-W sites).

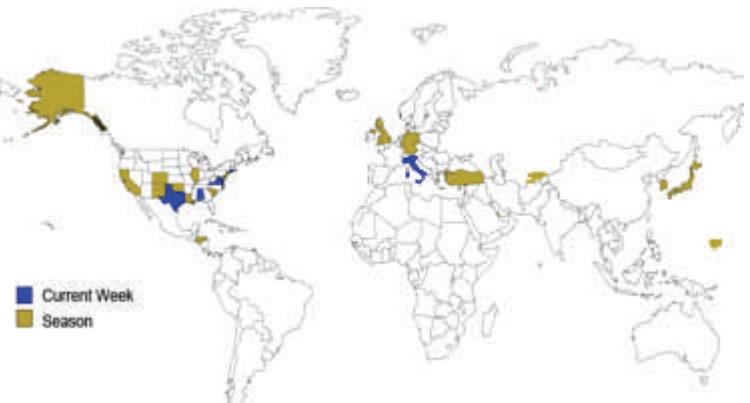
## Overall Laboratory Surveillance

### Sites submitting specimens for respiratory testing

**Week 47.** 5 sites collected specimens during Week 47 (4 sentinel, 1 non-sentinel). See map to the right.

**Season submission.** Since 02 October 2005, a total of 33 sites have submitted specimens to the AFIOH laboratory.

Fifty-one percent (n=146) of the specimens were collected from OCONUS sites and 49% (n=138) were from CONUS sites.



### Overall Laboratory Results

**Week 47 overview.** 10 specimens were collected during Week 47 and received at the AFIOH laboratory at the time of this report. 80% (n=8) of the specimens have a completed result. Please view Table 1. and Graphs 1-4 for a visual overview.

**Season overview.** Since 02 October 2005, a total of 285 specimens were collected and 98% (n=279) have a completed result at this time. Of the specimens with completed results, 84% (n=234) were negative and 16% (n=45) were positive for a respiratory virus. Of the total specimens having a completed result, 3% were positive for an influenza virus (2.2% influenza A; 0.4% influenza B).

Of the specimens positive for a respiratory virus, 13% (n=6) were influenza A, 2% (n=1) was influenza B; 18% (n=8) were adenovirus, 42% (n=19) were parainfluenza, 18% (n=8) were enterovirus, and 7% (n=3) were HSV.

**Subtyping.** 57% (n=4) of the influenza isolates were subtyped (4 influenza A/H3N2). Two influenza A isolates and one influenza B isolate are undergoing molecular sequencing.

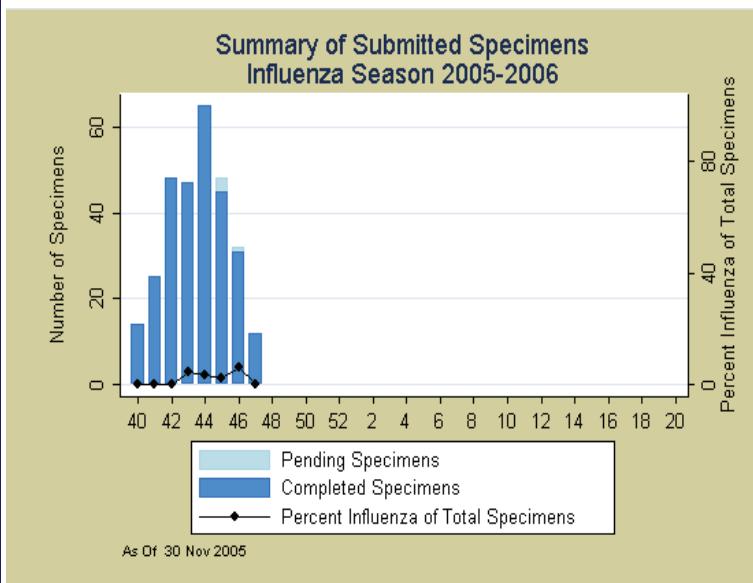
**Table 1. Laboratory Results by Military Command, Current Week and Season Totals.**

Result	Area of Responsibility												ALL SITES	
	CENTCOM		EUCOM		NORTHCOM		PACOM		OTHER					
	Week	Season	Week	Season	Week	Season	Week	Season	Week	Season				
Influenza A						4			2				6	
Influenza B											1	1		
Adenovirus				2	4	4			2				8	
Parainfluenza			1	7		11					1	19		
Enterovirus				4		2			2				8	
HSV		1		1							1	3		
RSV													0	
Negative		13		29	3	114			56		22	234		
Pending		0			1	3			2		0	5		
<b>TOTAL RECEIVED</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>43</b>	<b>8</b>	<b>138</b>	<b>0</b>	<b>64</b>	<b>0</b>	<b>25</b>	<b>284</b>			

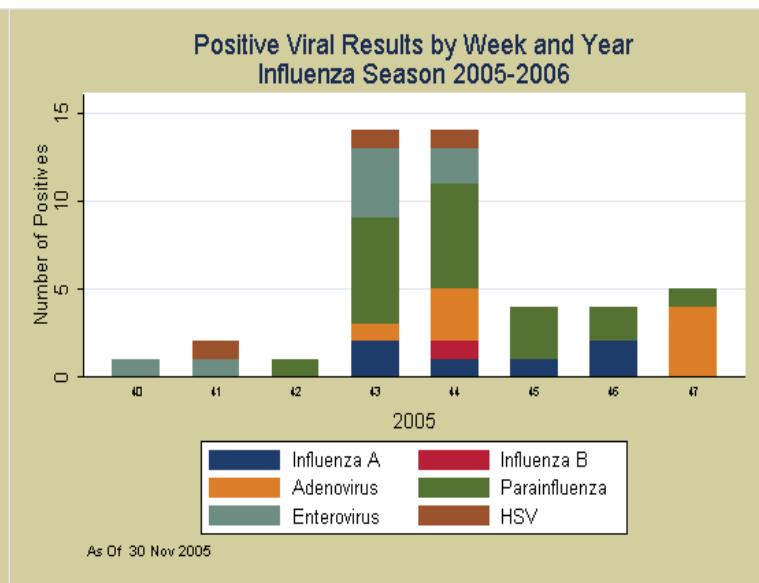
Please note: "OTHER" military command describes those specimens submitted by DoD overseas research laboratories and CHPPM-W sites.

*Overall Laboratory Results*

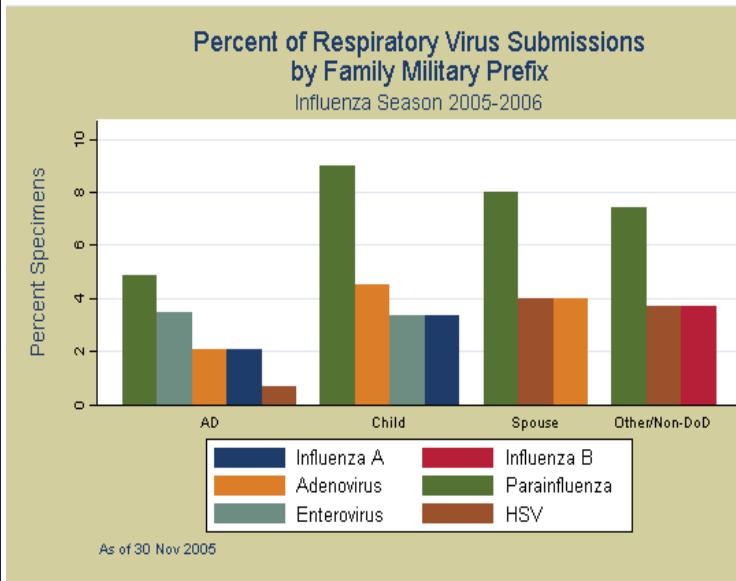
Graph 1.



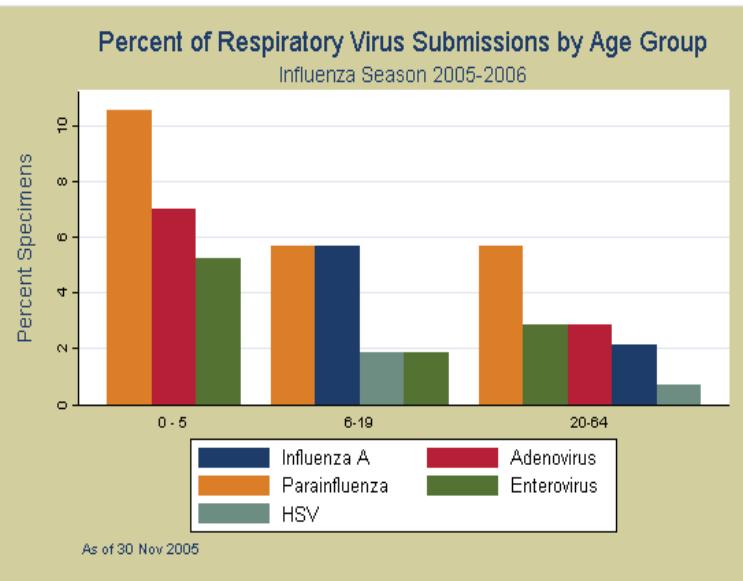
Graph 2.



Graph 3.



Graph 4.



## Sentinel Site Laboratory Surveillance

Thirty-nine sentinel sites are requested to collect 6-10 specimens each week from patients meeting the ILI case definition (**fever  $\geq 100.5^{\circ}\text{F}$  and cough or sore throat**) and complete the "Influenza Surveillance Questionnaire". Two sentinel sites, Tripler Army Medical Center (AMC), located in Hawaii, and Landstuhl Regional Medical Center (RMC), located in Germany, send selected influenza positive specimens to AFIOH to be further characterized. These sites are major medical centers and have established laboratories capable of detecting influenza. Their involvement in the DoD-wide program is valued due to their mission and geographical location.



### Sites submitting specimens for respiratory testing

**Week 47.** 4 sentinel sites collected specimens during Week 47 (see map to the right).

**Season submission.** Since 02 October 2005, a total of 22 sentinel sites have collectively submitted 189 specimens.

Sixty-one percent (n=121) of the specimens were collected from OCONUS sentinel sites and 39% (n=79) were from CONUS sentinel sites.



### Sentinel Site Laboratory Results

**Week 47 overview.** 8 specimens were collected during Week 47 and received by the AFIOH laboratory. 63% (n=5) of the specimens have a completed result. Please view Table 2. and Graphs 5-6 below for a visual overview.

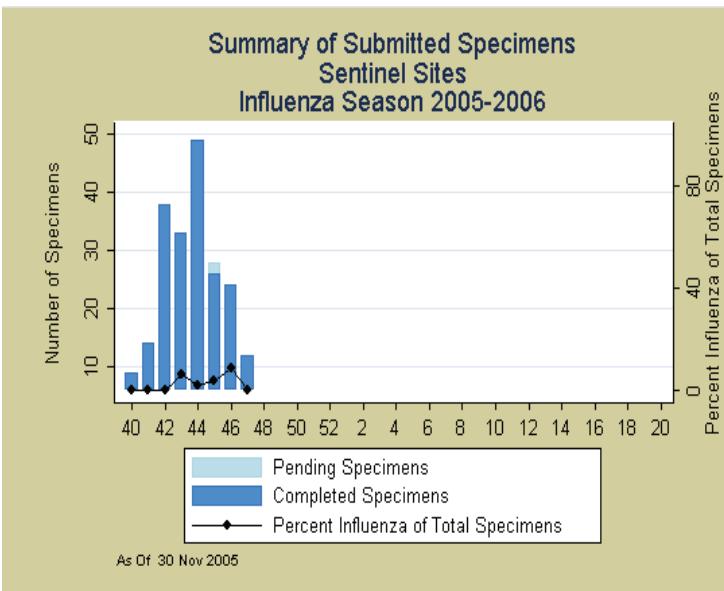
**Season overview.** Since 02 October 2005, a total of 200 specimens were collected and 99% (n=198) have a completed result at this time. Of the specimens with completed results, 82% (n=163) were negative and 18% (n=35) were positive for a respiratory virus. Of the total specimens having a completed result, 3% were positive for influenza A.

**Subtyping:** 67% (n=4) of the influenza isolates were subtyped as influenza A/H3N2. Two influenza A isolates are undergoing molecular sequencing.

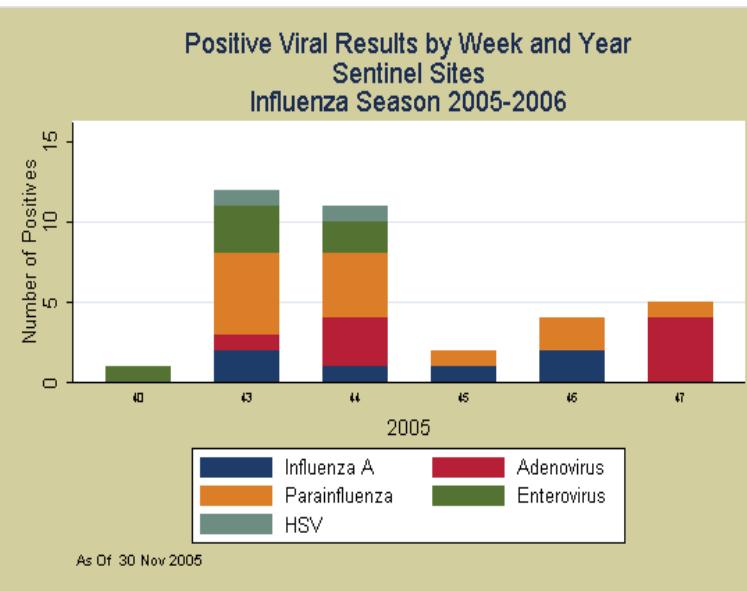
**Table 2. Sentinel Site Laboratory Results by MILITARY COMMAND**

Result	Area of Responsibility								
	CENTCOM		EUCOM		NORTHCOM		PACOM		ALL SITES
	Week	Season	Week	Season	Week	Season	Week	Season	
Influenza A						4		2	6
Influenza B									0
Adenovirus				2	4	4		2	8
Parainfluenza			1	7		6			13
Enterovirus				4				2	6
HSV	1		1						2
RSV									0
Negative		13		29	3	65		56	163
Pending								2	2
<b>TOTAL RECEIVED</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>43</b>	<b>7</b>	<b>79</b>	<b>0</b>	<b>64</b>	<b>200</b>

Graph 5.



Graph 6.



### Influenza Overview: Demographic Data

Demographics	Newly Identified		Cumulative (Season)	
	A	B	A	B
<b>Age (years)</b>				
0-5	0	0	0	0
6-19	0	0	3	0
20-64	0	0	3	0
65 +	0	0	0	0
Unknown	0	0	0	0
<b>OVERALL TOTALS</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>

Demographics	Newly Identified		Cumulative (Season)	
	A	B	A	B
<b>Vaccination Status</b>				
Injection	0	0	0	0
Nasal Spray (FluMist)	0	0	0	0
Not Vaccinated	0	0	3	0
Unknown	0	0	1	0
<b>OVERALL TOTALS</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>

Family Prefix Status	Newly Identified		Cumulative (Season)	
	A	B	A	B
Military member/Sponsor	0	0	3	0
Spouse	0	0	0	0
Child	0	0	3	0
Other/Unknown	0	0	0	0
<b>OVERALL TOTALS</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>

Hospitalization Status	Newly Identified		Cumulative (Season)	
	A	B	A	B
Hospitalized	0	0	0	0
Quarters	0	0	0	0
<b>OVERALL TOTALS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

\*Describes sentinel site data only

Demographics	Newly Identified		Cumulative (Season)	
	A	B	A	B
<b>Sentinel Sites (by MAJCOM)</b>				
<b>CENTCOM</b>				
Al Udeid AB, Qatar	0	0	0	0
Arifjan	0	0	0	0
Balad AB	0	0	0	0
Camp Buehring	0	0	0	0
Manas AB	0	0	0	0
<b>AETC</b>				
Maxwell AFB, AL	0	0	0	0
Sheppard AFB, TX	0	0	0	0
<b>AMC</b>				
Andrews AFB, MD	0	0	0	0
McGuire AFB/FT. Dix, NJ	0	0	0	0
Scott AFB, IL	0	0	0	0
Travis AFB, CA	0	0	0	0
<b>USAFE</b>				
Aviano AB, Italy	0	0	0	0
Incirlik AB, Turkey	0	0	0	0
RAF Lakenheath, UK	0	0	0	0
Ramstein AB, Germany	0	0	0	0
<b>USAFA</b>				
US Air Force Academy, CO	0	0	4	0
<b>PACAF</b>				
Andersen AFB, Guam	0	0	2	0
Elmendorf AFB, AK	0	0	0	0
Kadena AB, Japan	0	0	0	0
Kunsan AB, Korea	0	0	0	0
Misawa AB, Japan	0	0	0	0
Osan AB, Korea	0	0	0	0
Yokota AB, Japan	0	0	0	0
<b>NAVY</b>				
BMC Sasebo, Japan	0	0	0	0
NAB Little Creek, VA	0	0	0	0
NACC Groton, CT	0	0	0	0
NH Bethesda, MD	0	0	0	0
NH Bremerton, WA	0	0	0	0
NH Guam	0	0	0	0
NH Okinawa, Japan	0	0	0	0
NH Pearl Harbor/Hickham AFB, HI	0	0	0	0
NH Sigonella, Italy	0	0	0	0
NH Yokosuka, Japan	0	0	0	0
NMC San Diego, CA	0	0	0	0
<b>ARMY</b>				
Ft Drum, NY	0	0	0	0
Landstuhl RMC, Germany	0	0	0	0
Tripler AMC, HI	0	0	0	0
<b>COAST GUARD</b>				
Ketchikan, AK	0	0	0	0
<b>OVERALL SENTINEL TOTALS</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>

### Overseas Medical Research Laboratory Surveillance

Specimens are batched for shipments and therefore we do not receive specimens on a weekly or monthly basis.

#### Sites submitting specimens for respiratory testing

**Week 47.** At this time, the AFIOH laboratory has not received specimens collected during **Week 47** from the DoD overseas research laboratories or CHPPM-W sites.

**Season submission.** Since 02 October 2005, the AFIOH laboratory received specimens from one CHPPM-W site that collected specimens from local residents in Honduras.



#### Laboratory Results

**Week 47 overview.** 0 specimens were collected during Week 47 and received at AFIOH at the time of this report.

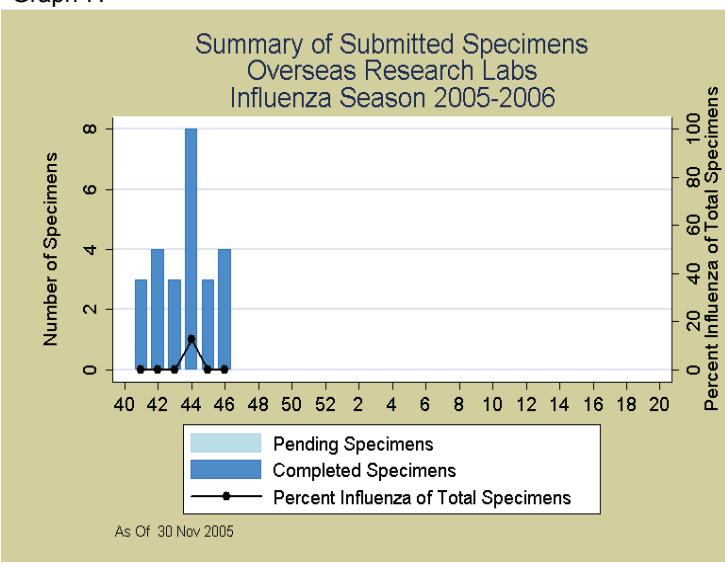
**Season overview:** Since 02 October 2005, 25 specimens were collected and all have a completed result. 88% (n=22) were negative and 12% (n=3) were positive for a respiratory virus. 4% (n=1) of the total specimens collected were positive for influenza B. Please view Graphs 7-8 below for a visual overview.

**Subtyping:** Influenza B subtype is pending at this time.

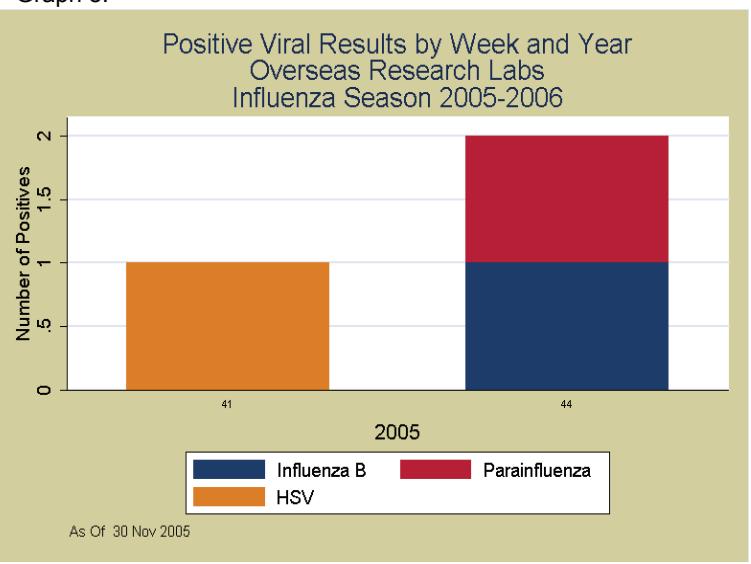
**Table 3. Overseas Research Laboratory Results by SITE**

Result	OVERSEAS MEDICAL RESEARCH FACILITY						ALL SITES	
	AFRIMS		NMRC-D		CHPPM-W			
	Week	Season	Week	Season	Week	Season		
Influenza A							0	
Influenza B						1	1	
Adenovirus							0	
Parainfluenza						1	1	
Enterovirus							0	
HSV						1	1	
RSV							0	
Negative						22	22	
Pending							0	
<b>TOTAL RECEIVED</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>25</b>	

Graph 7.



Graph 8.



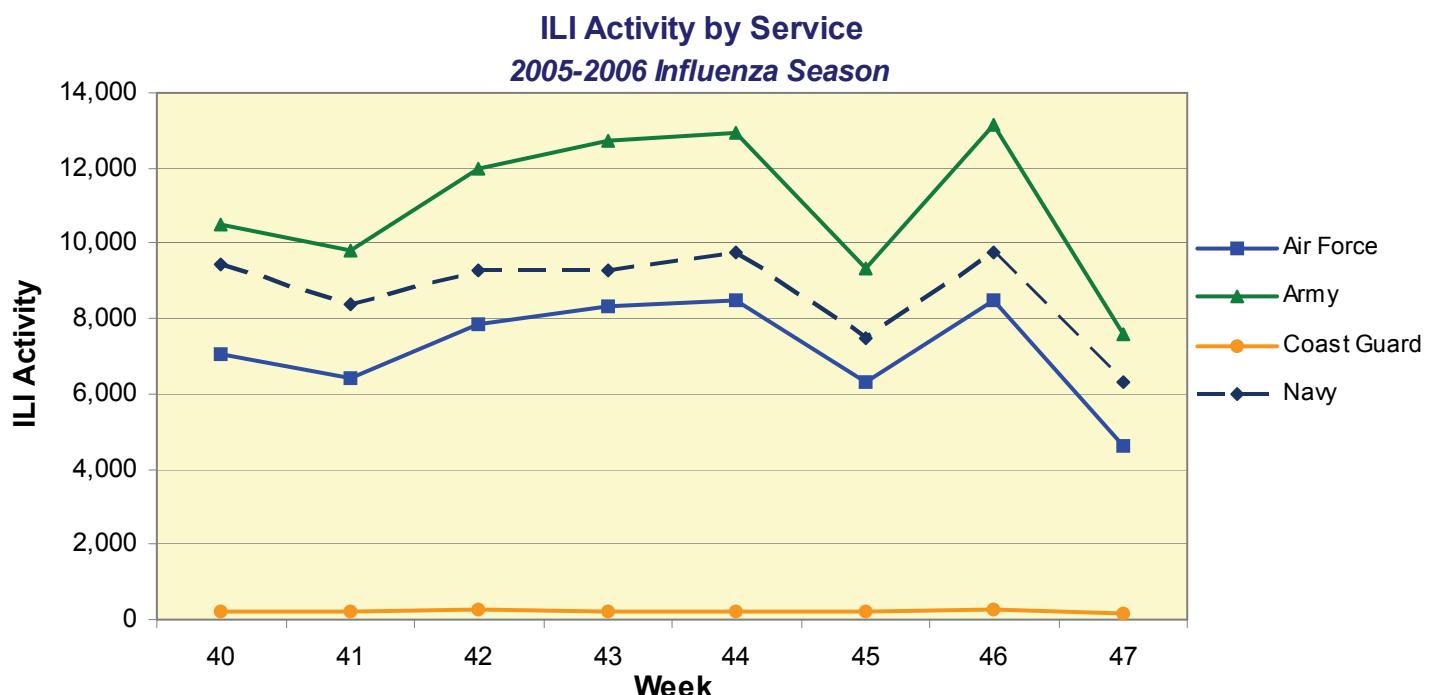
## ILI Surveillance

Influenza-like illness (ILI) activity is reviewed daily by AFIOH staff. The ILI data is gathered from the Electronic Surveillance System for the Early Notification of Community-Based Epidemics, Version IV (ESSENCE IV). The data is cleaned and a summary total of ICD-9's that match a smaller, but more specific and sensitive list of ICDs than is in the ESSENCE tool, are presented (see Table 4 and Graph 9). This list has been validated in a paper that is in the process of publication.

**Table 4. ILI Activity by Service and CDC Region, Week 47**

		WEEK 47 November 20-26, 2005				
		SERVICE				TOTAL
CDC REGION	Army	Coast Guard	Air Force	Navy		
	New England	0	16	31	119	<b>166</b>
	Mid-Atlantic	228	31	40	14	<b>313</b>
	East North Central	8	3	184	1,065	<b>1,260</b>
	West North Central	369	0	324	0	<b>693</b>
	South Atlantic	3,092	49	939	2,582	<b>6,662</b>
	East South Central	715	5	167	36	<b>923</b>
	West South Central	1,224	6	853	117	<b>2,200</b>
	Mountain	265	0	1,011	38	<b>1,314</b>
	Pacific	808	60	594	1,911	<b>3,373</b>
	Pacific Rim	91	0	141	275	<b>507</b>
	Europe	763	0	323	129	<b>1,215</b>
	Tropical	6	7	0	14	<b>27</b>
<b>TOTAL</b>		<b>7,569</b>	<b>177</b>	<b>4,607</b>	<b>6,300</b>	<b>18,653</b>

**Graph 9. ILI Activity by Service, 2005-2006 Season**



### Additional Influenza Surveillance: Army MEDCENs

The Army performs influenza surveillance at 6 Army Medical Center (MEDCEN) locations (Dwight David Eisenhower Army Medical Center [DDEAMC], Walter Reed Army Medical Center [WRAMC], Brooke Army Medical Center [BAMC], Madigan Army Medical Center [MAMC], Tripler Army Medical Center [TAMC], and Landstuhl Regional Medical Center [LRMC]), two of which are included in AFIOH's sentinel site surveillance network (please see map to right). AFIOH considers both TAMC and LRMC as unique sentinel sites as they submit only positive influenza specimens to AFIOH for further characterization.

The Army MEDCEN sites are major medical centers equipped with the capability of detecting respiratory viruses, including influenza. It is important to note that the methodology varies at each site (i.e., testing procedures include direct fluorescent-antibody [DFA], various rapid antigen tests, culture, and polymerase chain reaction [PCR]) and reporting is routine, but varies from site to site (i.e., weekly, bi-weekly, monthly). The information reported and shared with AFIOH describes results from the individual MEDCENs and does not include demographic information at this time.

**Week 47 overview.** 32 specimens were collected and tested during Week 47 (47% [n=15] tested by LRMC; 53% (n=17) from BAMC). 9% (n=3) were positive for a respiratory virus (1 RSV; 1 parainfluenza; 1 adenovirus).

**Season overview:** Since 02 October 2005, 564 specimens were collected and tested. Eighty-three percent (n=470) were negative and 17% (n=94) were positive for a respiratory virus (3 influenza A; 27 RSV; 18 parainfluenza; and 46 adenovirus). Of the specimens collected and tested, 0.5% were positive for an influenza virus.

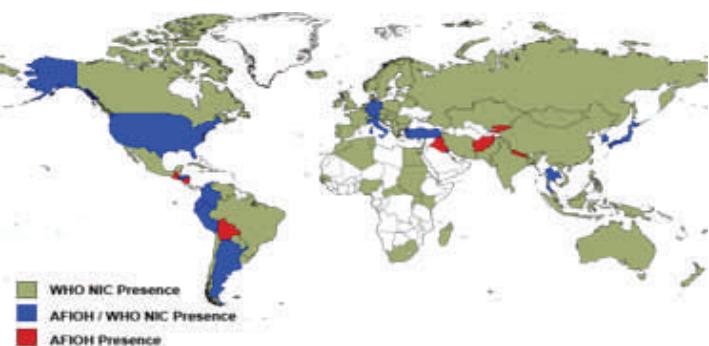
**Subtyping:** No data to report.



### Contributions to National and Global Influenza Surveillance

The map to the right provides an illustration of how AFIOH data augments the current influenza surveillance network. **It is important to note that although a country is highlighted, surveillance may be limited in scope.**

WHO has 113 National Influenza Centers (NIC) located in 87 countries. AFIOH provides influenza surveillance data from 21 countries - 8 countries (Bolivia, El Salvador, Guatemala, Iraq, Kyrgyzstan, Nepal, Nicaragua, and Qatar) are not otherwise included in the current WHO network.



*Please note: This map describes the countries submitting specimens to AFIOH and does not include all DoD contributing countries (i.e., NAMRU-2 and NAMRU-3 surveillance described on page 12).*

### Data Sharing

Each week, AFIOH electronically reports de-identified program data to CDC using the Public Health Laboratory Information System (PHLIS). On 29 November 2005, AFIOH reported respiratory data from 82 (285 for the 2005-2006 season) completed specimens to CDC for use in WHO's global influenza surveillance and CDC's United States influenza surveillance.

AFIOH also electronically reports aggregate respiratory data gathered from Texas military sites to the Texas Department of State Health Services (TDSHS).

### CDC / WHO Influenza Surveillance

Surveillance summaries for CDC and WHO were gathered from the websites listed below on 29 November 2005.

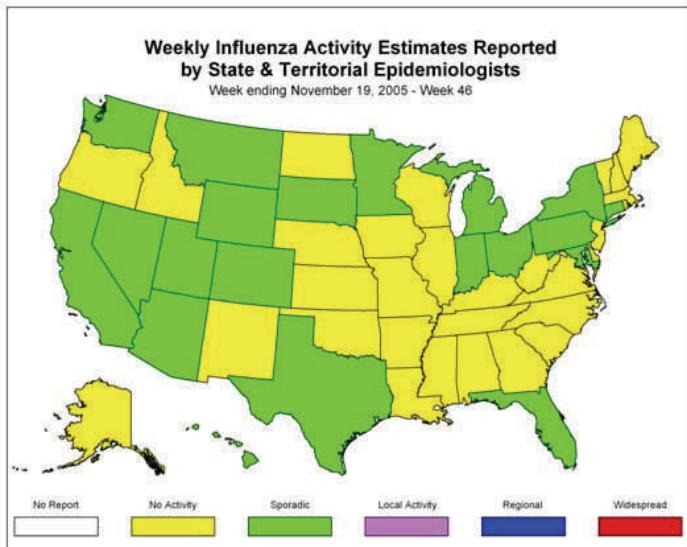
**CDC.** CDC reported a low influenza activity level (1.1%) in the US during **Week 46**. Patients seeking care due to ILI also occurred at a low level (1.5%).

**WHO.** During **Week 47**, China, Spain, and Tunisia identified influenza (Table 4.). The level of ILI in the Ukraine has increased, but no isolates have been identified. Please see the table and maps below.

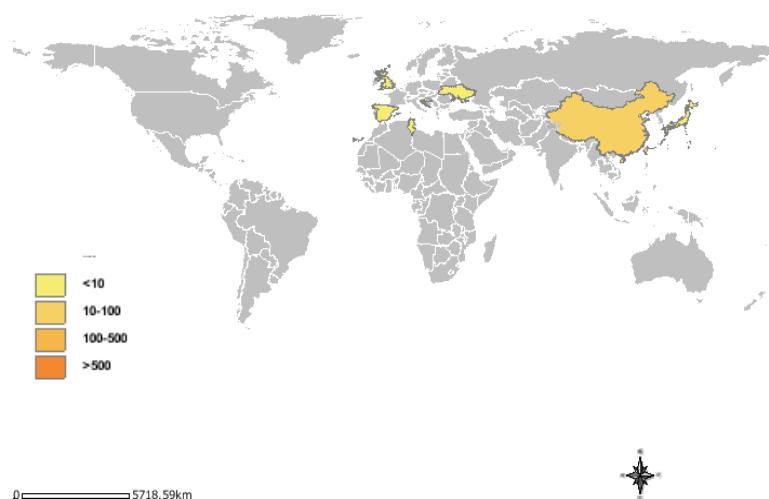
**Table 4. WHO Influenza Summary Table, Week 47.**

Country	Influenza Type					<b>Total</b>
	A (not subtyped)	A (H1)	A (H3)	B	Other	
China	4		9	3		<b>16</b>
Spain					3	<b>3</b>
Tunisia		3	1		4	<b>8</b>
<b>Total</b>	<b>4</b>	<b>3</b>	<b>10</b>	<b>3</b>	<b>7</b>	<b>27</b>

CDC U.S. Influenza Surveillance Map<sup>1</sup>



WHO International Influenza Surveillance Map<sup>2</sup>



### Detailed WHO and/or CDC Influenza Surveillance Information:

- National Influenza Activity (**CDC**): <http://www.cdc.gov/ncidod/diseases/flu/weeklychoice.htm>
- International Influenza Activity (**WHO**): <http://gamapserver.who.int/GlobalAtlas/home.asp>

## Influenza News

### Influenza Outbreaks

At this time, AFIOH has received no information of outbreaks occurring at any of the sentinel site locations.

**Human Avian Influenza.** From Nov 26, 2003 to Nov 29, 2005 there were 133 cases of avian influenza confirmed by WHO. The case fatality rate is 51.1%. Please see the table below gathered from the WHO website on 29 November 2005.

Reference: [http://www.who.int/csr/disease/avian\\_influenza/country/en/](http://www.who.int/csr/disease/avian_influenza/country/en/)

**Table 4. Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO (as of 29 November 2005)**

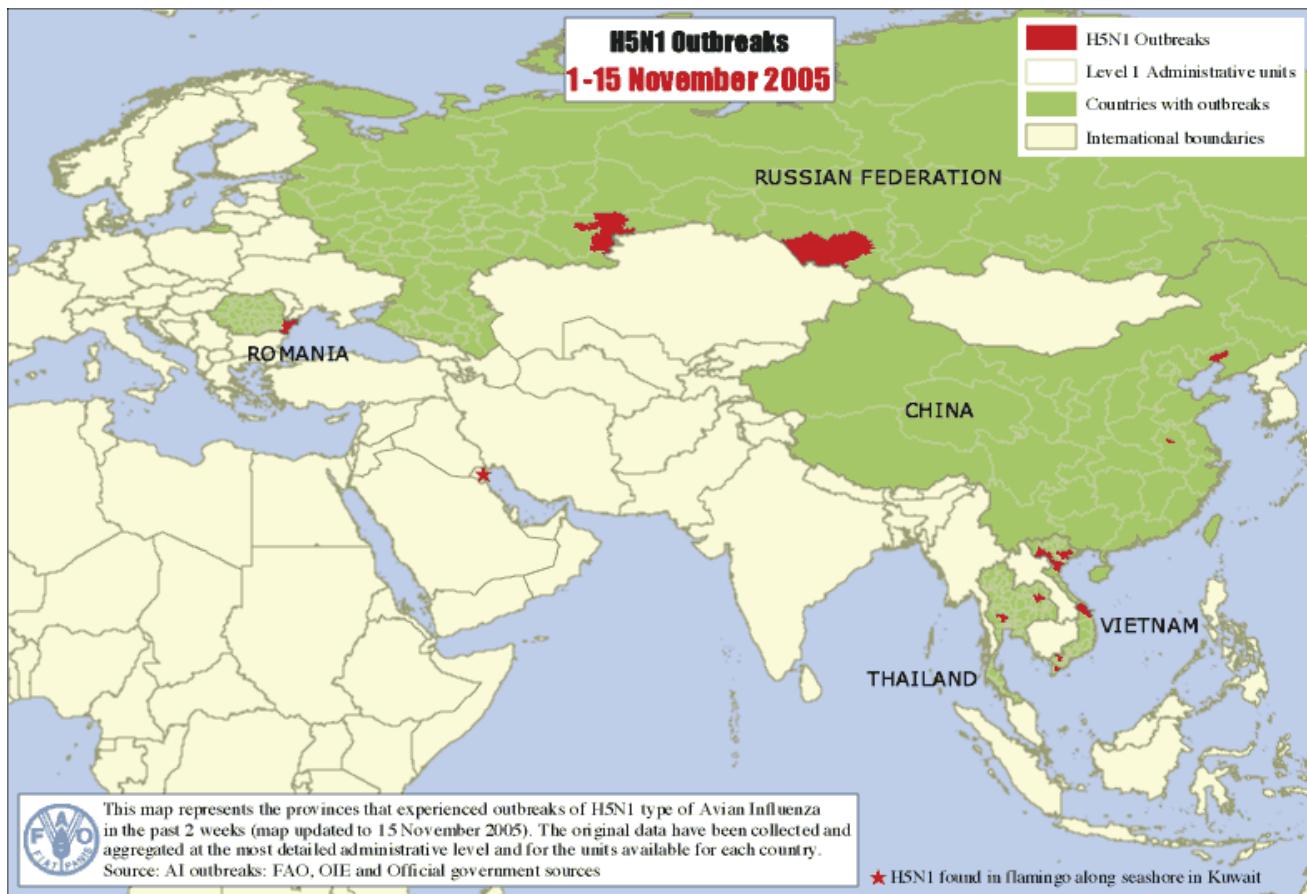
Date of onset	Indonesia		Viet Nam		Thailand		Cambodia		China		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
26.12.03-10.03.04	0	0	23	16	12	8	0	0	0	0	35	24
19.07.04-08.10.04	0	0	4	4	5	4	0	0	0	0	9	8
16.12.04- to date	12	7	66	22	4	1	4	4	3	2	89	36
Total	12	7	93	42	21	13	4	4	3	2	133	68

Total number of cases includes number of deaths.

WHO reports only laboratory-confirmed cases.

### Avian Influenza Outbreaks.

The following map was gathered on 29 November at <http://www.fao.org/ag/againfo/programmes/en/empres/maps.html>. The map describes outbreaks occurring between 1-15 November. Please visit the Food and Agriculture Organization of the United Nations (FAO) website for detailed information ([www.fao.org](http://www.fao.org)).



## DoD Global Influenza Surveillance Program Background

### DoD-GEIS Influenza Surveillance Network

The DoD Global Influenza Surveillance Program was established by the Global Emerging Infections Surveillance and Response System (GEIS) in 1997. It involves a unique network of influenza surveillance efforts from the Air Force (global influenza surveillance established in 1976), the Navy (recruit adenovirus surveillance established in 1996), and the DoD overseas medical research facilities (i.e., the Naval Medical Research Unit located in Cairo, Egypt [NAMRU-2] and the Naval Medical Research Unit located in Jakarta, Indonesia [NAMRU-3]).

### AFIOH Influenza Surveillance Network

In 1976, the US Air Force Medical Service began conducting routine lab-based surveillance of influenza throughout the world. Efforts were expanded when it became part of the DoD-GEIS influenza surveillance network in 1997. AFIOH manages the Air Force surveillance program that includes global influenza surveillance among DoD beneficiaries at 39 tri-service sentinel sites (including deployed locations in Iraq, Qatar, and Kyrgyzstan), several non-sentinel sites, two DoD overseas medical research laboratories (the Armed Forces Research Institute of Medical Sciences located in Bangkok, Thailand [AFRIMS], and the U.S. Naval Medical Research Center-Detachment [NMRC-D] located in Lima, Peru) that collect specimens from local residents in Nepal, Thailand, Argentina, Bolivia, Ecuador, Peru, and Colombia, and the US Army Center for Health Promotion and Preventive Medicine-West (CHPPM-W), that collect specimens from local residents in El Salvador, Guatemala, and Honduras.

### Processing Methods

Specimens are processed in BSL-2 conditions (BSL-3 available) and tested for influenza, parainfluenza, adenovirus, enterovirus, herpes simplex virus (HSV), and respiratory syncytial virus (RSV). Specimens are held up to 14 days before a negative result is given. All influenza isolates are typed as A or B and a portion are subtyped using hemagglutination-inhibition (HI) or polymerase chain reaction (PCR) procedures. A portion of these isolates undergo molecular sequencing.

### 2005-2006 Trivalent Influenza Vaccine Composition

#### Northern Hemisphere

- A/New Caledonia/20/99-like (H1N1)
- A/California/7/2004-like (H3N2)
- B/Shanghai/361/2002-like

#### Southern Hemisphere (WHO recommendations)

- A/New Caledonia/20/99-like (H1N1)
- A/Wellington/1/2004-like (H3N2)
- B/Shanghai/361/2002-

This report was prepared on **29 November 2005** by Angela Owens. For an expanded view of the information in this report, visit our website at <https://gumbo.brooks.af.mil/pestilence/Influenza/>. Also available on our website is a list of previous weekly surveillance reports, program information for sentinel sites (including an educational briefing and instruction pamphlets for clinic staff), and an overview of historical data.

Please visit the [DoD-GEIS website](#) for an overview of influenza surveillance at all collaborating centers.

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